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CROPS MANAGEMENT

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Make tough calls for fertilizer program in ’25

Where can you cut costs without trimming potential profit? Three crop specialists offer their perspectives.

Tom J. Bechman, Midwest Crops Editor

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5 Min Read

MONITOR NUTRIENTS: Without a proper soil testing program, fields could become deficient in a nutrient like potassium. These soybeans are showing symptoms of potassium deficiency. TOM J. BECHMAN

At a Glance

- Three agronomists offer three different views for addressing fertilizer needs in 2025.
- An improved corn-price-to-nitrogen-cost ratio is a silver lining scenario.
- Think through future impacts before making changes to your fertilizer program.

Ask three people if you can cut fertilizer for your 2025 cropping program, and you get three different answers. But they agree on one point: If you can defer certain fertilizer costs, still think about the future at the same time.

“Growers may be able to adjust and apply less next year, but there could be implications in 2026 and beyond,” says Matt Clover, a soil fertility researcher and agronomist with Pioneer.

Farm Progress posed questions about potential fertilizer adjustments for 2025 to Clover and two others — Jamie Bultemeier, director of sales and marketing and an agronomist for A&L Great Lakes Labs, and a farmer from Fort Wayne, Ind.; and Richard Ferguson, Extension agronomist and soil fertility specialist with the University of Nebraska-Lincoln.

Can growers cut back on nitrogen for corn?

Clover: You need enough nitrogen for the crop, and you need enough phosphorus, potassium and sulfur at the right times so plants can best utilize nitrogen. Even with low corn prices going into 2025, the silver lining is that nitrogen prices are also lower.

I focus on the corn-price-to-nitrogen-cost ratio. Traditionally, if it is 10-to-1 or higher, you have more flexibility with nitrogen rates. In the early 2000s, it was 11-to-1, and reached 15-to-1 in ’13 and ’14 when nitrogen prices were still low. After they shot up, it was at a historic low of 8-to-1 in ’21 and ’22. In that scenario, if you suspect nitrogen losses and consider investing in more nitrogen, it means thinking harder about if it is worth it. Right now, it’s back to around 10-to-1, which is more reasonable.

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The big factor with nitrogen is avoiding or minimizing loss, especially in wet seasons. A nitrification inhibitor has a proven track record of providing financial benefit in those situations.

Ferguson: Current guidelines are in Nutrient Management Suggestions for Corn. However, for irrigated corn, UNL recommendations are in review and likely to be revised to increase the focus on avoiding nitrogen stress during the growing season, rather than a focus on nitrogen application rate. A new publication with these recommendations is currently in review and will be available this winter.

Bultemeier: If you measure nitrogen left over in the fall either by a stalk nitrate test or PSNT soil test, interpreting it is always the issue. If you only see a small amount left, is that good because the crop used up nearly everything you applied? Or did you cut it too close? You may need to rely on scouting notes to sort it out.

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How should farmers set up a basic soil fertility program for phosphorus and potassium for 2025?

Clover: Start with yield goal. Then, calculate crop removal. For me, applying enough nutrients to cover crop removal is a bare minimum. If you need to cut costs, I at least recommend applying enough fertilizer to make up for the amount removed by the crop. Then, pull soil tests and decide on final fertilizer rates for P and K.

If farmers must cut back on fertilizer for 2025, which nutrients might offer an opportunity?

Ferguson: UNL would not recommend arbitrarily cutting back on fertilizer. All fertilizer recommendations are based on soil test information and potential for economic response. If a given nutrient soil test level is below a critical value, a fertilizer recommendation is made with the expectation that yield response will more than pay for the fertilizer input.

However, if a soil test level is above the critical value, and farmers are used to applying fertilizer based on crop removal to maintain a given soil test level, it would be appropriate to reduce or eliminate fertilizer application to save money.

Applying for crop removal would not be a minimal recommendation by UNL. But it requires soil testing. Depending on soil test level, one can certainly reduce or eliminate fertilizer application. Soil test levels will gradually decline over time, but if soil tests are well above a critical level, several years of little or no fertilizer application can be justified.

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General UNL nutrient management recommendations and crop removal rates for specific crops are in the publication Nutrient Management for Agronomic Crops of Nebraska.

What data do soil test labs have about P and K trends over time?

Bultemeier: We track P and K levels for all samples. They primarily come from Illinois, Indiana, Michigan and Ohio — the eastern Corn Belt. Phosphorus levels tend to be in good shape. Our samples for phosphorus average about 45 parts per million, or 90 pounds per acre, on Bray P1 test. Mehlich numbers run slightly higher. This is well above critical levels set by Tri-State Fertilizer Recommendations.

However, phosphorus levels have averaged dropping about 0.3 ppm per year since ’96. Average K level is 140 ppm or 280 pounds per acre, dropping about 0.5 ppm per year. Potassium, on average, is closer to the critical level than phosphorus. Based on current trends, it could be below the critical level in 20 to 25 years.

My theory is that both P and K levels are down partly because yields are up, often higher than a grower’s yield goal. If you only fertilize for yield goal, there will be slippage over time.

What other nutrients should farmers pay attention to in ’25?

Clover: I rank sulfur as important as N, P and K. Realize that the recommended N-to-S ratio today is about 11-to-1, where it was once 15-to-1. Corn needs enough sulfur to fully utilize N.

Ferguson: Sulfur is critical. The need for fertilization is reflected partly by soil test. In irrigated fields, it also depends on irrigation water. See Sulfur Management in Agricultural Systems of Nebraska.

Bultemeier: Sulfur is critical. For micronutrients, I look at zinc, boron and manganese.

Clover: If you need boron, make sure it is there when corn requires it. Err on the side of early versus late.

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